sidewall surface of said large-diameter contact hole excluding said funnel-shaped portion, to a position which is lower than a lower end of said funnel-shaped portion by a predetermined distance, a wiring conductor layer being deposited on said insulator film to cover a top surface of said plug of said refractory conductive material and to fill at least in part space remaining in said large-diameter contact hole thereby to cover a bottom of said large-diameter contact hole and a surface of said sidewall of said refractory conductive material within said large-diameter contact hole, and to cover a surface of said funnel-shaped portion of said large-diameter contact hole.

20. (Amended) A semiconductor device including both a large-diameter contact hole and a small-diameter contact hole formed to penetrate through an insulator film formed on a semiconductor substrate to reach said semiconductor substrate, each of said large-diameter contact hole and said small-diameter contact hole having a funnel-shaped portion formed on an upper portion thereof to open or spread upward, said small-diameter contact hole being completely filled with a plug of a refractory conductive material which contacts said semiconductor substrate, and said large-diameter contact hole being partly filled by said refractory conductive material which covers a sidewall surface of said large-diameter contact hole excluding said funnel-shaped portion, to a position which is lower than a lower end of said funnel-shaped portion by a predetermined distance, said refractory conductive material covering said sidewall surface of said large-diameter contact hole having a thickness on a lower portion of said hole, equal to about half the diameter of the small-diameter contact hole, a wiring conductor layer being deposited on said insulator film to cover a top surface of said plug of said refractory conductive material and to fill at least in part space remaining in said large-diameter contact hole thereby to cover a bottom of said large-diameter contact hole and a surface of said sidewall of

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said refractory conductive material within said large-diameter contact hole, and to cover a surface of said funnel-shaped portion of said large-diameter contact hole.

Kindly add new claims 29-46, to read as follows:

--29. A semiconductor device including both a large-diameter contact hole and a small-diameter contact hole formed to penetrate through an insulator film formed on a semiconductor substrate to reach said semiconductor substrate, said small-diameter contact hole being completely filled with a plug of a refractory conductive material, said plug contacting said semiconductor substrate, and said large-diameter contact hole being partly filled by said refractory conductive material which covers a sidewall surface of said large-diameter contact hole, a wiring conductor layer being deposited on said insulator film to cover a top surface of said plug of said refractory conductive material and to contact said semiconductor substrate and a surface of said sidewall of said refractory conductive material within said large-diameter contact hole.

30. A semiconductor device claimed in Claim 29, wherein said refractory conductive material is a material selected from the group consisting of a refractory metal and a silicide of a refractory metal.

31. A semiconductor device claimed in Claim 29, wherein said large-diameter contact hole has an aspect ratio of not greater than 2, and said small-diameter contact hole has an aspect ratio of greater than 2.

32. A semiconductor device claimed in Claim 31, wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.

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33. A semiconductor device claimed in Claim 29, wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.

34. A semiconductor device claimed in Claim 29, wherein said refractory conductive material is a material selected from the group consisting of a refractory metal and a silicide of a refractory metal.

35. A semiconductor device claimed in Claim 34, wherein said large-diameter contact hole has an aspect ratio of not greater than 2, and said small-diameter contact hole has an aspect ratio of greater than 2.

36. A semiconductor device claimed in Claim 35, wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.

37. A semiconductor device claimed in Claim 34, wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.

38. A semiconductor device including both a large-diameter contact hole and a small-diameter contact hole formed to penetrate through an insulator film formed on a semiconductor substrate to reach said semiconductor substrate, said small-diameter contact hole being completely filled with a plug of a refractory conductive material, which contacts said semiconductor substrate, and said large-diameter contact hole being partly filled by said refractory conductive material, said refractory conductive material covering said sidewall surface of said large-diameter contact hole having a thickness on a lower portion of said hole, equal to about half the diameter of the small-diameter contact hole, a wiring conductor layer being

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deposited on said insulator film to cover a top surface of said plug of said refractory conductive material and to fill at least in part space remaining in said large-diameter contact hole thereby to contact said semiconductor substrate.

39. A semiconductor device claimed in Claim 38, wherein said refractory conductive material is a material selected from the group consisting of a refractory metal and a silicide of a refractory metal.

40. A semiconductor device claimed in Claim 38, wherein said large-diameter contact hole has an aspect ratio of not greater than 2, and said small-diameter contact hole has an aspect ratio of greater than 2.

41. A semiconductor device claimed in Claim 40, wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.

42. A semiconductor device claimed in Claim 38, wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.

43. A semiconductor device claimed in Claim 38, wherein said refractory conductive material is a material selected from the group consisting of a refractory metal and a silicide of a refractory metal.

44. A semiconductor device claimed in Claim 43, wherein said large-diameter contact hole has an aspect ratio of not greater than 2, and said small-diameter contact hole has an aspect ratio of greater than 2.

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